

## HEALTHY COMMUNITIES DATA AND INDICATORS PROJECT

**Short Title:** Food Affordability

**Full Title:** Average cost of a market basket of nutritious food items relative to income

1. **Healthy Community Framework:** Meets basic needs of all
2. **What is our aspirational goal:** Affordable, accessible and nutritious foods
3. **Why is this important to health?**

### Description of significance and health connection

An adequate, nutritious diet is a necessity at all stages of life. Pregnant women and their developing babies, children, adolescents, adults, and older adults depend on adequate nutrition for optimum development and maintenance of health and functioning. Inadequate diets can impair intellectual performance and have been linked to more frequent school absence and poorer educational achievement in children. Nutrition also plays a significant role in causing or preventing a number of illnesses, such as cardiovascular disease, some cancers, obesity, type 2 diabetes, and anemia.

At least two factors influence the affordability of food and the dietary choices of families – the cost of food and family income. The inability to afford food is a major factor in food insecurity, which has a spectrum of effects including anxiety over food sufficiency or food shortages; reduced quality or desirability of diet; and disrupted eating patterns and reduced food intake.

Inadequate diet and physical inactivity are responsible for approximately 17% of deaths in the United States.<sup>1</sup> In 2011, approximately 16% of Californians experienced food insecurity at some time during the course of the year. Approximately one-third of California's low income households comprised of single adults with children experienced food insecurity in 2005. Low-income African Americans (37.5%) and Latinos (32.6%) report a higher frequency of food insecurity than either Whites (28.6%) or Asians (24.1%). Low-income residents living in the Central Valley are more likely to be food insecure than other Californians.<sup>2</sup>

### Summary of evidence

There is a large body of scientific research that shows nutrition disorders can be caused by an insufficient intake of food or certain nutrients, by an inability of the body to absorb and use nutrients, or by overconsumption of certain foods. Examples include obesity caused by excess energy intake, anemia caused by insufficient intake of iron, and impaired sight because of inadequate intake of vitamin A.<sup>3</sup>

### References

1. Mokdad et al. Actual Causes of Death in the United States, 2000. JAMA. 2004;291:1238-1245
2. Harrison GG, Sharp M, Manalo-LeClair G, Ramirez A, McGarvey N. Food security among California's Low-Income Adults Improves. But Most Severely Affected Do Not Share Improvement. Los Angeles: UCLA Center for Health Policy Research; 2007.
3. Agricultural Research Service. Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010. Washington, DC: Department of Agriculture and United States Department of Health and Human Services; May 2010.  
<http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2010/DGAC/Report/2010DGACReport-camera-ready-Jan11-11.pdf>, Accessed January 20, 2013.

#### 4. What is the indicator?

Detailed Definition: The ratio of dollars to purchase the annual market basket of foods in USDA's low plan for meals eaten at home for a female-headed household with children under 18 years of age, relative to her annual inflation-adjusted income.

Stratification: Race/Ethnicity (8 U.S. Census groups)

Years available: 2005 – 2012

Updated: annually

Geographies available: city/town, county, region, state

##### Data Description

Data source 1: Center for Nutrition Policy and Promotion. Official USDA Food Plans: Average U.S. Cost of Food at Home at Four Levels <http://www.cnpp.usda.gov/USDAFoodCost-Home.htm>

Data source 2: American Community Survey. Households and families. Table S1101. Washington, DC: U.S. Census Bureau. <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

Data source 3: American Community Survey. Median Income in the Last 12 Months by Family Type. Table B19126. Washington, DC: U.S. Census Bureau.

<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

The annual cost of food is based on the USDA's low-cost food plan, which includes a market basket of items that families would have to purchase to provide a nutritious diet for each family member. To determine the costs, the USDA conducts a monthly national market basket survey of food items. The USDA tabulates per person costs by age for children <11 years, and age and gender for those aged 12-71+ years. For the HCI project, family costs were the sum of costs for the female head of household and the per child-cost multiplied by the area average number of children under 18 years of age, taking into account their age distribution. The USDA annual costs were expressed in constant 2010 dollars and adjusted for regional differences (Los Angeles, Bay Area, San Diego, California average) based on the Consumer Price Index food at home. Standard errors of the ratio were calculated using published margins of error for the average number of children and median income in the ACS. Standard errors were used to calculate 95% confidence intervals and relative standard errors. Regional estimates were based on county groupings associated with California metropolitan planning organizations as reported in the *2010 California Regional Progress Report* ([http://www.dot.ca.gov/hq/tpp/offices/orip/Collaborative%20Planning/Files/CARegionalProgress\\_2-1-2011.pdf](http://www.dot.ca.gov/hq/tpp/offices/orip/Collaborative%20Planning/Files/CARegionalProgress_2-1-2011.pdf)).

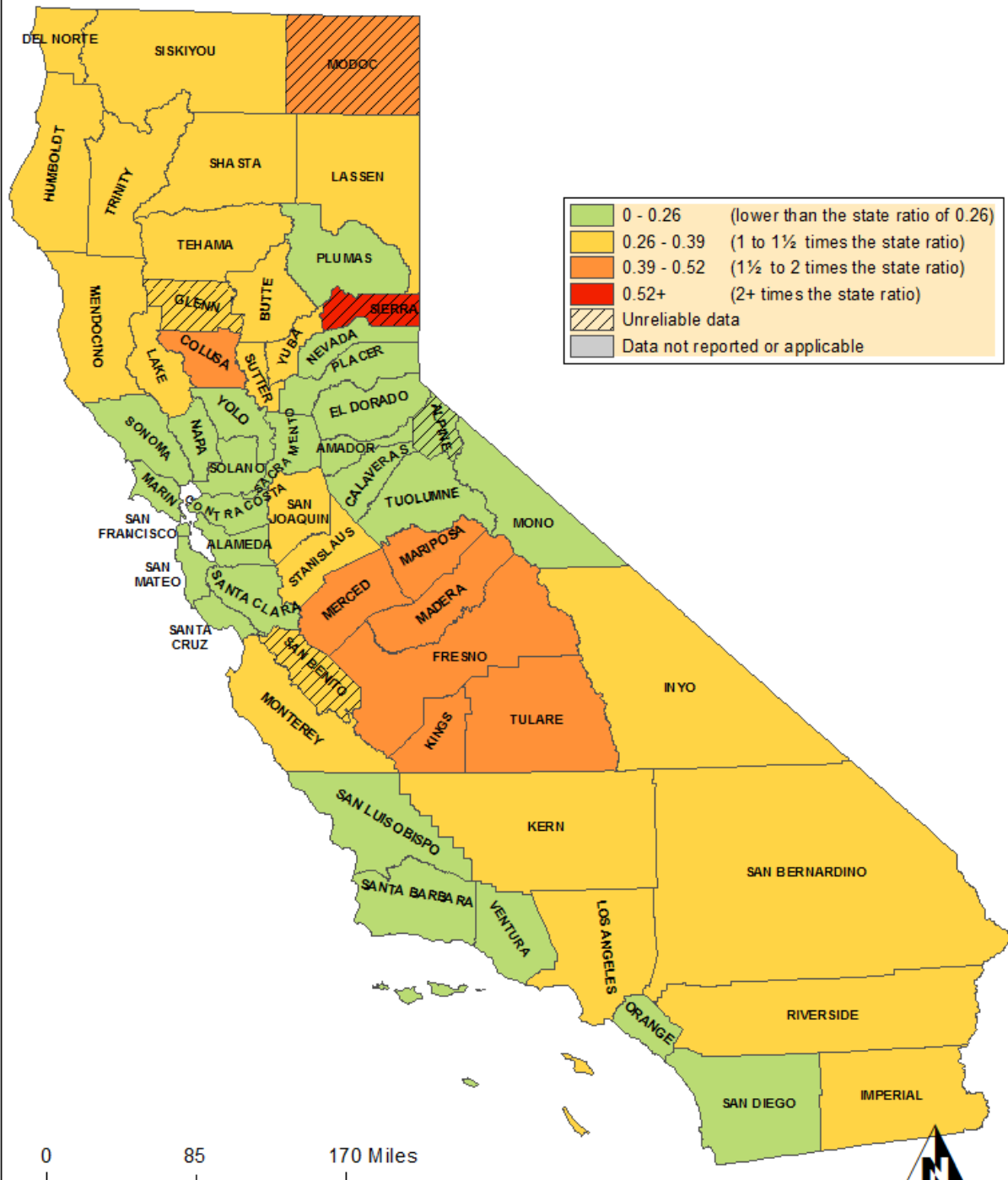
#### 5. Limitations

Geographic variation in food costs is only considered at the regional level. For some families a substantial number of meals may be eaten outside of the home, and these costs are not included. Standard errors of the ratio (cost/income) are underestimated because standard errors for food costs were not available for USDA survey data.

#### 6. Projects using this indicator

1. Economic Research Service Food CPI and Expenditures: Table 8. Food expenditures by families and individuals as a share of disposable personal money income. Washington, DC: US Department of Agriculture. <http://www.ers.usda.gov/data-products/food-expenditures.aspx#26636>. Accessed January 20, 2013.
2. Economic and Social Development Department. Food security indicators. Food and Agriculture Organization. <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/> Accessed January 20, 2013.
3. Glasmeier AK, Arete W. Poverty in America: Living Wage Calculator. Cambridge, MA: Massachusetts Institute of Technology; 2012. <http://livingwage.mit.edu/>. Accessed on 8/27/12.

**Map 1: Average Cost of a Market Basket of Nutritious Food Items Relative to Income, by County, California, 2006-2010**



Source: USDA Average U.S. Cost of Food at Home at Four Levels, American Community Survey (2006-2010)

Analysis by CDPH and UCSF

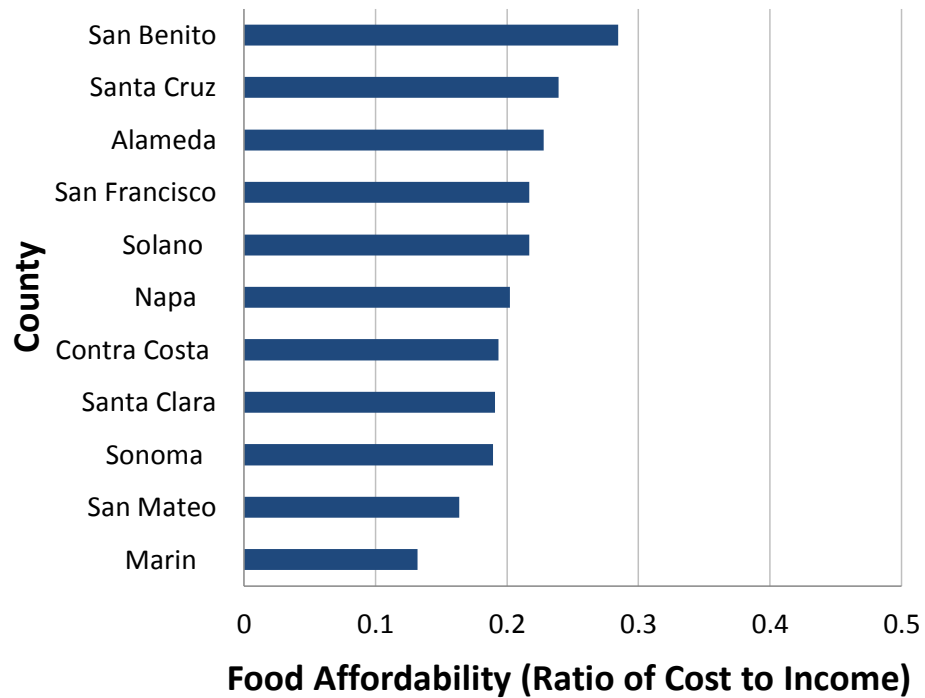
**Table 1. Average Cost of a Market Basket of Nutritious Food Items Relative to Income for a Female-Headed Household with Children Under 18 Years of Age, Cities/Towns, Contra Costa County, 2006-2010**

City/town	Cost (\$)/Yr	Median Income, \$	Ratio
Bay Point	8,440	12,167	0.69
Rollingwood	11,069	26,364	0.41*
Vine Hill	6,699	16,000	0.41*
Rodeo	7,266	19,735	0.36*
San Pablo	6,876	20,639	0.33
Tara Hills	6,614	19,786	0.33*
North Richmond	9,250	30,363	0.30*
Richmond	7,287	26,825	0.27
Montalvin Manor	6,307	24,271	0.25*
Antioch	7,865	31,479	0.24
Pittsburg	7,867	32,326	0.24
El Sobrante	6,383	27,131	0.23*
Crockett	7,779	35,857	0.21*
Pinole	6,768	31,000	0.21*
Martinez	6,588	31,418	0.20
Oakley	6,569	31,447	0.20*
Concord	6,795	37,262	0.18
Clyde	7,533	42,250	0.17*
El Cerrito	5,881	34,318	0.17
Discovery Bay	7,146	44,631	0.16
Moraga town	6,896	42,151	0.16
Mountain View	6,781	46,000	0.14*
Pleasant Hill	6,287	44,545	0.14
Brentwood	7,879	64,848	0.12
Saranap	6,164	51,188	0.12
Hercules	6,742	56,183	0.11
Kensington	5,743	55,714	0.10*
Walnut Creek	5,987	58,894	0.10
East Richmond Heights	7,143	75,227	0.09*
San Ramon	6,140	67,540	0.09
Blackhawk	5,863	66,000	0.08
Camino Tassajara	6,664	81,000	0.08
Danville town	6,571	77,826	0.08
San Miguel	5,547	72,386	0.07*
Alamo	6,724	111,250	0.06*
Clayton	8,815	137,885	0.06*
Lafayette	6,119	100,152	0.06*
Acalanes Ridge	5,890	102,750	0.05*
Castle Hill	4,811	89,792	0.05*
Orinda	6,854	155,865	0.04*

Data Source: USDA Low Cost Meals Eaten at Home, American Community Survey, 2006-2010

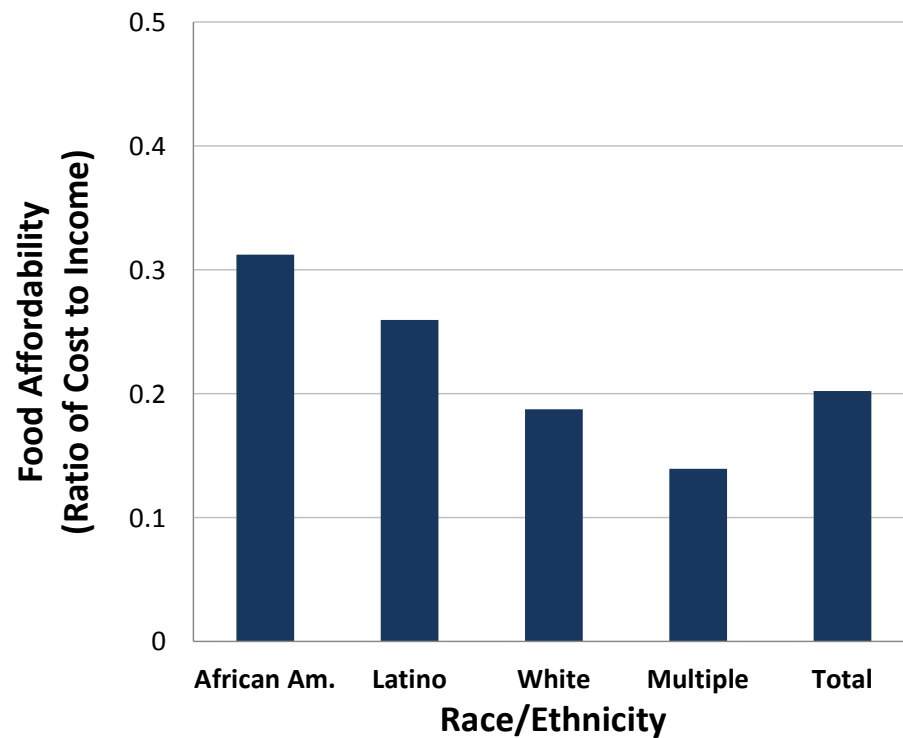
\* Not statistically reliable (Relative Standard Error > 30%)

**Figure 1. Average Cost of a Market Basket of Nutritious Food Items Relative to Income for a Female-Headed Household with Children Under 18 Years of Age, Bay Area Counties, 2006-2010**



Data Source: USDA Low Cost Meals Eaten at Home, American Community Survey, 2006-2010

**Figure 2. Average Cost of a Market Basket of Nutritious Food Items Relative to Income for a Female-Headed Household with Children Under 18 Years of Age by Race/Ethnicity, Napa County , 2006-2010**



Data Source: USDA Low Cost Meals Eaten at Home, American Community Survey, 2006-2010

Note: Asian, Native Hawaiian and Other Pacific Islander, American Indian/Alaska Native, Other Race did not have statistically reliable data and are not presented